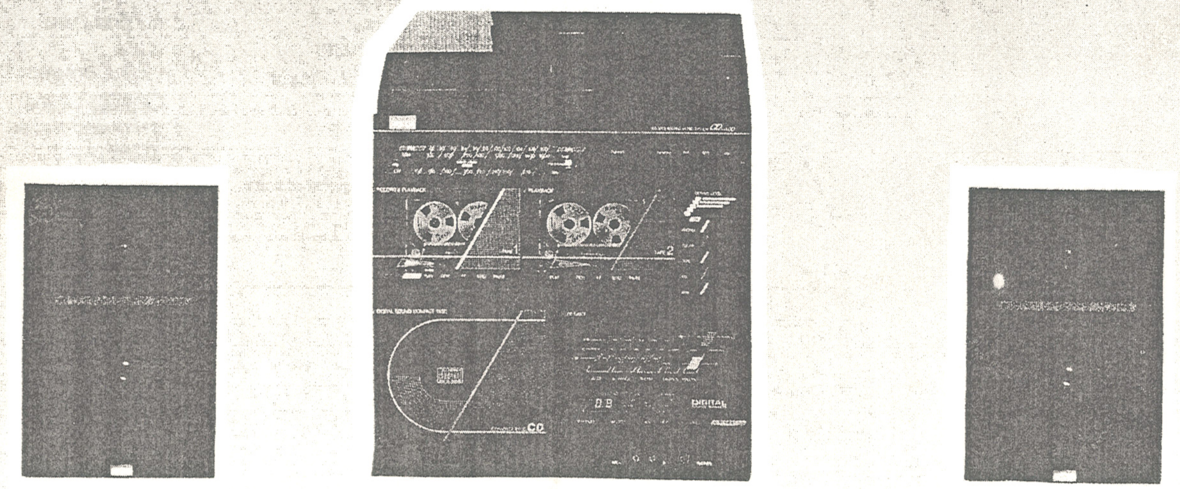
AMSTRAD FIDELITY



CDX400
COMPACT DISC HI-FI SYSTEM
SERVICE MANUAL

ALIGNMENT INSTRUCTIONS

Equipment required: VTVM; AM/FM Band SSG; Loop Antenna; AM/FM IF Genoscope; Non Metallic Trimming Tool; Dummy Load; -470K; Oscilloscope; Frequency Counter.

AM Alignment

Step	FUNCTION	SIGNAL IN	SIGNAL OUT	METHOD	REMARKS
1.	AM IF Alignment at 465kHz.	Inject signal at AM antenna from AM IF SG. Select 465kHz AS IF.	Connect O'scope at cross R119 or R120.	Adjust L104 to get max signal outpur on the 'scope.	1. Ensure set switched to MW band 2. Vol control max. Tone control at centre. 3. Sig. input optimum to avoid AGC action
2.		REPEAT STEP 1 UNTIL NO FURTHER IMPROVEMENT IS OBSERVED.			
3.	MW Osc. Alignment at 510kHz.	Connect loop antenna to the ferrite rod. Inject signal from AM SSG at 510kHz.	Connect VTVM and O'scope across speaker output via dummy load.	Adjust L106 to obtain max sig. output on the meter and 'scope.	1. Ensure set tuned to 510kHz. 2. Vol control max. Tone control at centre. 3. Sig. input optimum to avoid AGC action. 4. MW position.
4.	MW Osc. Alignment at 1650kHz.	Connect loop antenna to the ferrite rod. Inject signal from AM SSG at 1650kHz.	Connect VTVM and O'scope across speaker output via dummy load.	Adjust TC104 to obtain max sig. output on meter.	1. Ensure set tuned to 1650kHz. 2. Vol. control max. Tone control at centre. 3. Sig. input optimum to avoid AGC action. 4. MW position.
5.		REPEAT STEPS 3 & 4 UNTIL NO FURTHER IMPROVEMENT OBTAINED.			
6.	MW aerial alignment at 600kHz.	Connect loop ant. to the ferrite rod to inject sig from AM SSG at 600kHz.	Connect VTVM and O'scope across speaker output via dummy load.	Adjust MW L107 ant. coil to obtain max sig. output on the meter and the 'scope.	1. Ensure set tuned to 600kHz MW. 2. Vol control max. Tone control at centre. 3. Sig. output optimum to avoid AGC action.
7.	MW aerial alignment at 1400kHz.	Connect loop ant. on the ferrite rod to inject sig from AM SSG at 1400kHz.	Connect VTVM and O'scope across speaker output via dummy load.	Adjust TC103 to obtain max sig. output on the meter and 'scope.	1. Ensure set tuned to 1400kHz MW. 2. Vol. control max. Tone control at centre. 3. Sig. input optimum to avoid AGC action.
8.		REPEAT STEPS 6 & 7 UNTIL NO FURTHER IMPROVEMENT OBTAINED.			
9.	LW Osc and aerial alignment at 135-155kHz.	Connect loop ant to ferrite rod. Inject 145kHz from AM SSG.	Connect VTVM and O'scope across speaker output via dummy load.	Adjust LW L107 ant coil and 1 to obtain max sig. output on the meter and the 'scope.	1. Ensure set switched to LW. 2. Set tuned to 135-155kHz. 3. Vol control max. Tone control at centre. 4. Sig. input optimum to avoid AGC action.
10.	LW Osc alignment at 265-300kHz.	Connect loop ant to ferrite rod. Inject 165-300kHz from AM SSG.	Connect VTVM and O'scope across speaker output via dummy load.	Adjust TC105 and to obtain max sig. output on the meter and 'scope.	1. Ensure set switched to LW. 2. Vol control max. Tone control at centre. 3. Sig. input optimum to avoid AGC action.
11.		REPEAT STEPS 9 & 10 UNTIL NO FURTHER IMPROVEMENT OBTAINED			MW & LW alignment now complete. Ensure all the coils and transformers are sealed.
12.	LW Osc alignment at 170kHz.	Connect loop ant to ferrite rod. Inject 170kHz from AM SSG.	Connect VTVM and O'scope across speaker output via dummy load.	Adjust LW Ant. Coil L107 to obtain max sig. output on the meter and 'scope.	1. Ensure set switched to LW. 2. Set tuned to 170kHz. 3. Vol control max. Tone control at centre. 4. Sig. input optimum to avoid AGC action.
13.	LW Osc alignment at 260kHz.	Connect loop ant to ferrite rod. Inject 260kHz from AM SSG.	Connect VTVM and O'scope across speaker output via dummy load.	Adjust RF Trimmer to obtain max sig. output on the meter and 'scope.	1. Ensure set switched to LW. 2. Set tuned to 260kHz. 3. Vol control max. Tone control at centre. 4. Sig. input optimum to avoid AGC action.

FM Alignment

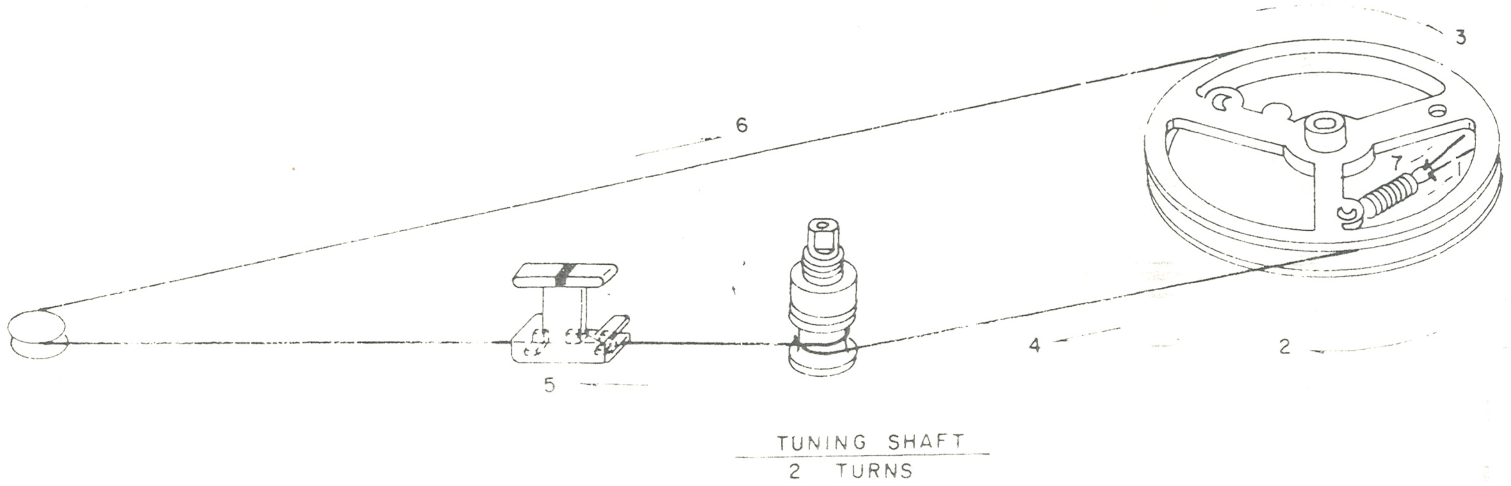
1.	FM IF alignment at 10.7MHz.	Inject 10.7MHz signal from FM IF SSG at antenna terminal.	Connect O'scope at R119 or R120.	Adjust L102 & L105 respectively to obtain max output on the 'scope with a symmetrical 'S' curve centered at 10.7MHz.	1. Set switched to FM. 2. Ensure stereo/mono sw. switched to mono. 3. Sig. input optimum to avoid AGC action.
2	FM Osc. alignment at 87MHz.	Inject 87MHz signal from FM IF SSG at FM Ant. Jack.	Connect 'scope & VTVM across dummy load on speaker socket.	Adjust L103 to obtain max output on the meter.	1. Ensure set tuned to 87MHz. 2. Ensure stereo/mono sw. switched to mono. 3. Sig. input optimum to avoid AGC action.
3	FM Osc. alignment at 109MHz.	Inject 109MHz signal from FM IF SSG at FM Ant. Jack.	Connect 'scope & VTVM across dummy load on speaker socket.	Adjust TC-101 to obtain max output on the meter.	1. Ensure set tuned to 109MHz. 2. Ensure stereo/mono sw. switched to mono. 3. Sig. input optimum to avoid AGC action.
4.		REPEAT STEPS 1 - 3 UNTIL NO FURTHER IMPROVEMENT OBTAINED.			
5.	FM Osc. tracking at 90MHz.	Inject 90MHz signal from FM IF SSG at FM Ant. Jack.	Connect 'scope & VTVM across dummy load on speaker socket.	Adjust L101 to obtain max output on the meter.	1. Ensure set switched to 90MHz, vol max. 2. Tone control to centre. 3. Sig. input optimum to avoid AGC action.
6.	FM Osc. tracking at 106MHz.	Inject 106MHz signal from FM IF SSG at FM Ant. Jack.	Connect 'scope and TVTM across dummy load on speaker socket.	Adjust TC-102 to obtain max output on the meter.	1. Ensure set tuned to 106MHz, vol max. 2. Tone control to centre. 3. Sig. input optimum to avoid AGC action.
7.		REPEAT STEPS 5 & 6 UNTIL NO FURTHER IMPROVEMENT OBTAINED.			
8.	FM MXP adjustment.	Set tuned to 98MHz.	Frequency counter at Pin 12, IC103.	Adjust SFR101 to get the stereo beacon on & to read 19kHz ±50Hz on frequency counter More than 25dB separation obtained between L & R channels.	1. Ensure set switched to FM. 2. Ensure stereo/mono sw switched to stereo. FM alignment now complete

TAPE ALIGNMENT.

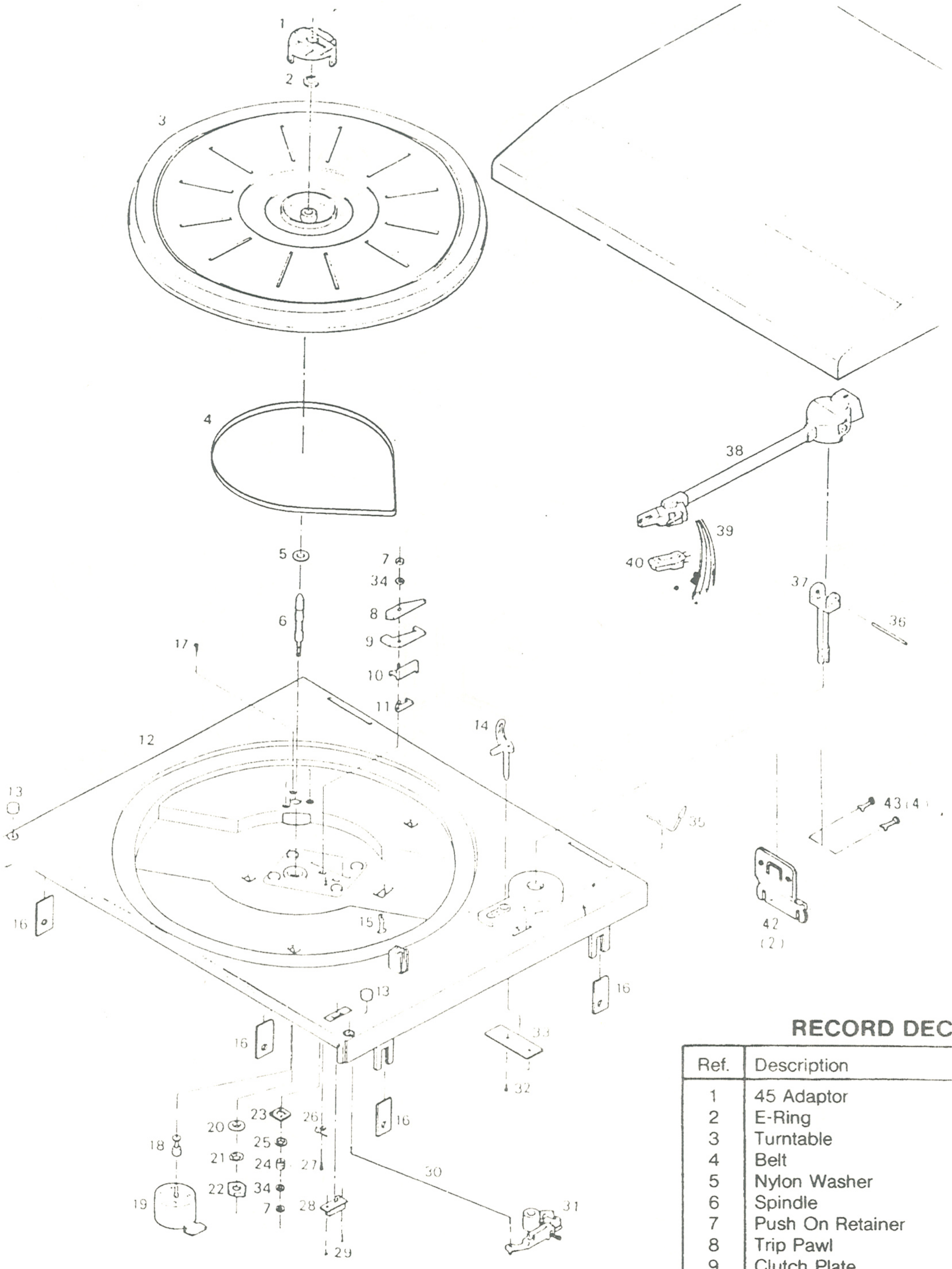
Equipment required: Double Beam Oscilloscope; VTVM; Frequency Counter.

Step	FUNCTION	SIGNAL IN	SIGNAL OUT	METHOD	REMARKS
1.	Azimuth & Phase alignment.	10kHz std sig. tape in the player.	Connect VTVM across the dummy load at the output.	Adj. azimuth screw on the left side of the R/P head.	1. Adjust output to the same amplitude and synchronise phase. 2. Graphic equaliser in central position.
2.	Tape speed adjustment.	3kHz std sig. tape in the player.	1. Connect VTVM across the dummy load at the output. 2. Freq. counter to read 3kHz ± 90Hz.	Adjust semi fix preset within the tape player motor.	1. Adj. output to the same amplitude and synchronise phase. 2. Graphic equaliser in centre position.
3.	Output level setting.	1kHz std sig. tape in the player.	1. Connect VTVM across the dummy load at the output.	Adjust SFR201 to make output equal. 2. Adjust SFR101 to get output difference less than 3dB.	Tape 1 output is present. Tape 2 output to be checked.
4.	Recording Bias adj.		Frequency counter across erase head.	Adj. L203 to read 60kHz +2kHz.	Insert tape in the tape compartment and activate recording system. i.e. playback/record switch in record mode.

DIAL CORD STRINGING DIAGRAM


3
6
7
1
4
2
5
TUNING SHAFT
2 TURNS

RECORD DECK & PARTS LIST


1
2
3
4
5
6
7
34
8
9
10
11
17
12
13
14
35
38
39
40
37
36
43 (4)
42
(2)
16
15
13
16
16
33
32
16
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23
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22
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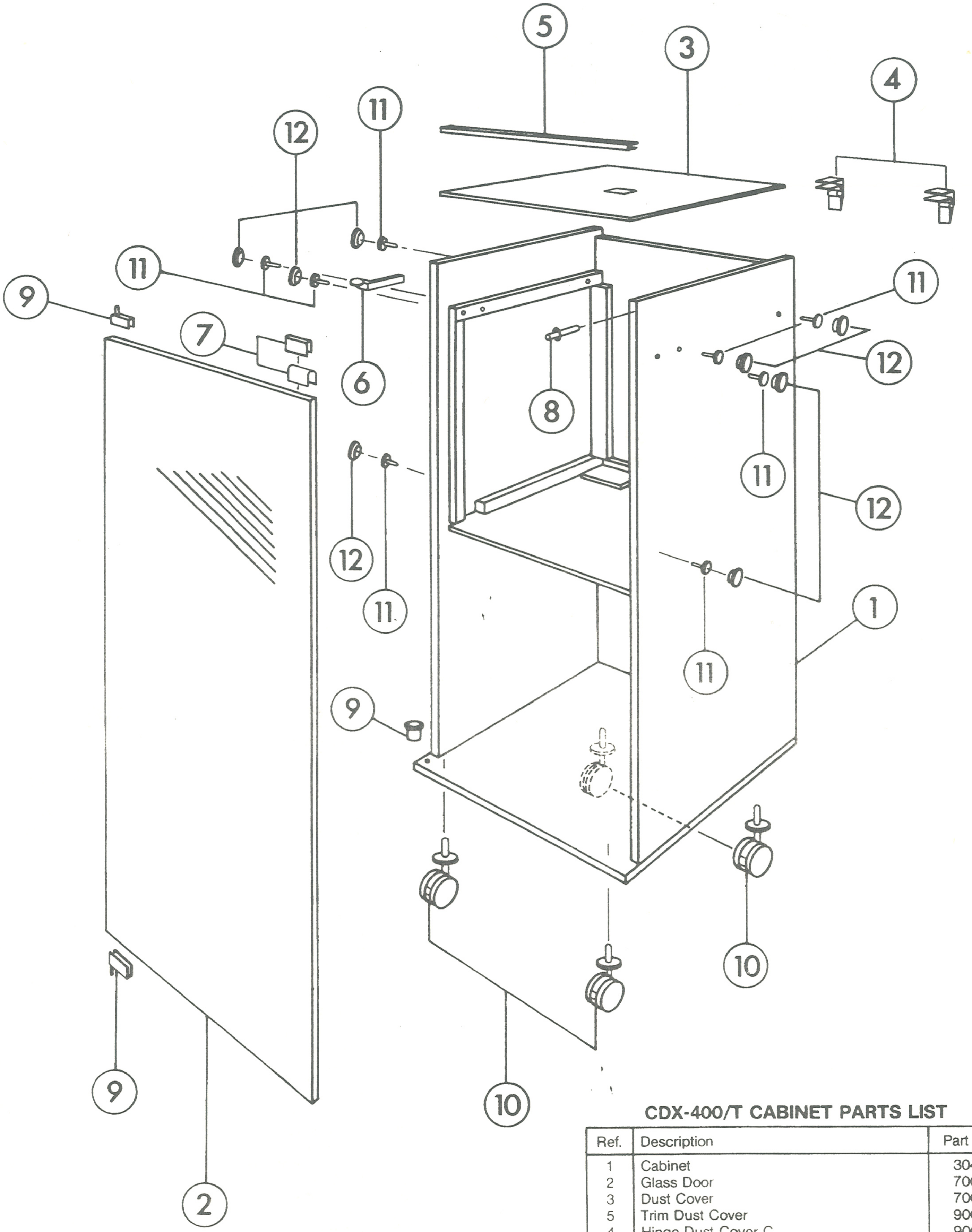
29

RECORD DECK PARTS LIST

Ref.	Description	Part No.
1	45 Adaptor	200103
2	E-Ring	200213
3	Turntable	201470
4	Belt	200122
5	Nylon Washer	200458
6	Spindle	201767
7	Push On Retainer	200216
8	Trip Pawl	200217
9	Clutch Plate	200218
10	Slider	200219
11	Catch	200220
12	Motor Base	
13	Cushion	201768
14	Lifter	200115
15	Lock	200229
16	Bracket Fixing	
18	Motor Pulley	200475
19	Motor 9V	201769
20	Washer 1.0	
21	Lock Washer	
22	Nut M4	
26	Leaf Switch	200223
28	Slider Switch	201770
30	Trip Rod	201771
31	Control Lever Ass'y	200478
33	PC Board Ass'y	
35	Cue Rod Ass'y	200496
36	Pin	201476
37	Gimble	200491
38	Tone Arm	201772
40	Cartridge X-800-1	200108
40A	Stylus ST-800-1	200109
41	Dust Cover	201661
42	Hinge	201662
43	Push Rivet	

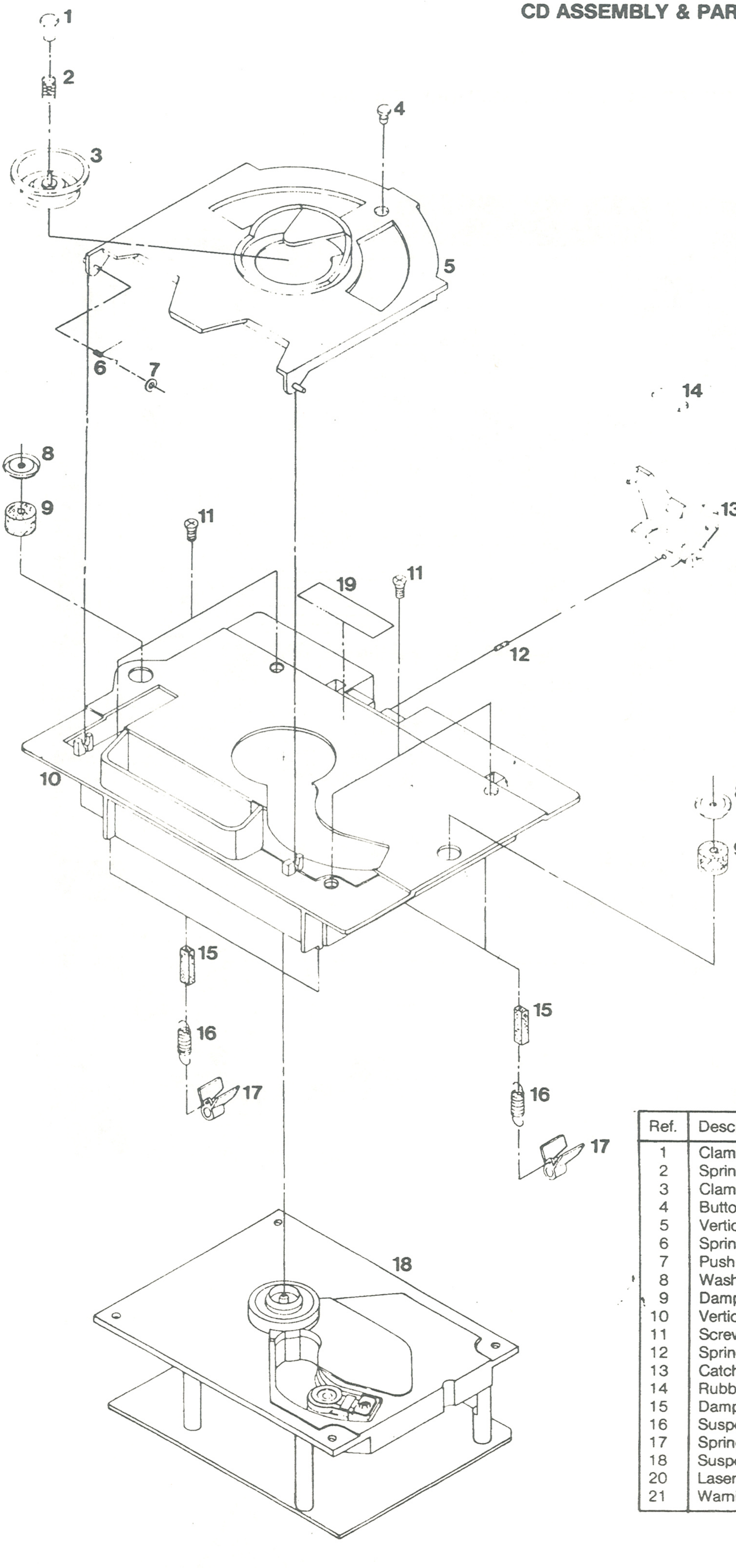
TOWER CABINET & PARTS LIST


5
3
4
11
12
11
11
9
7
6
12
8
11
12
12
11
1
9
11
10
10
9
2

CDX-400/T CABINET PARTS LIST

Ref.	Description	Part No.
1	Cabinet	30401
2	Glass Door	70004
3	Dust Cover	70003
5	Trim Dust Cover	90090
4	Hinge Dust Cover C	90008
9	Hinge Door Kit (9+7+9A+6)	90112
10	Castor	90100
12	Screw Caps	B10044
	Speakers (T)	LS440

CD ASSEMBLY & PARTS LIST



LASER SAFETY

This product employs a laser. Only qualified service personnel may remove the cover or attempt to service this product. Failure to observe this notice may result in possible eye injury

CAUTION - USE OF CONTROLS, OR ADJUSTMENTS TO PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE

This product bears the following warning label on the rear panel

CLASS 1
LASER PRODUCT

DANGER: INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK FAILED OR DEFEATED. AVOID DIRECT EXPOSURE TO BEAM

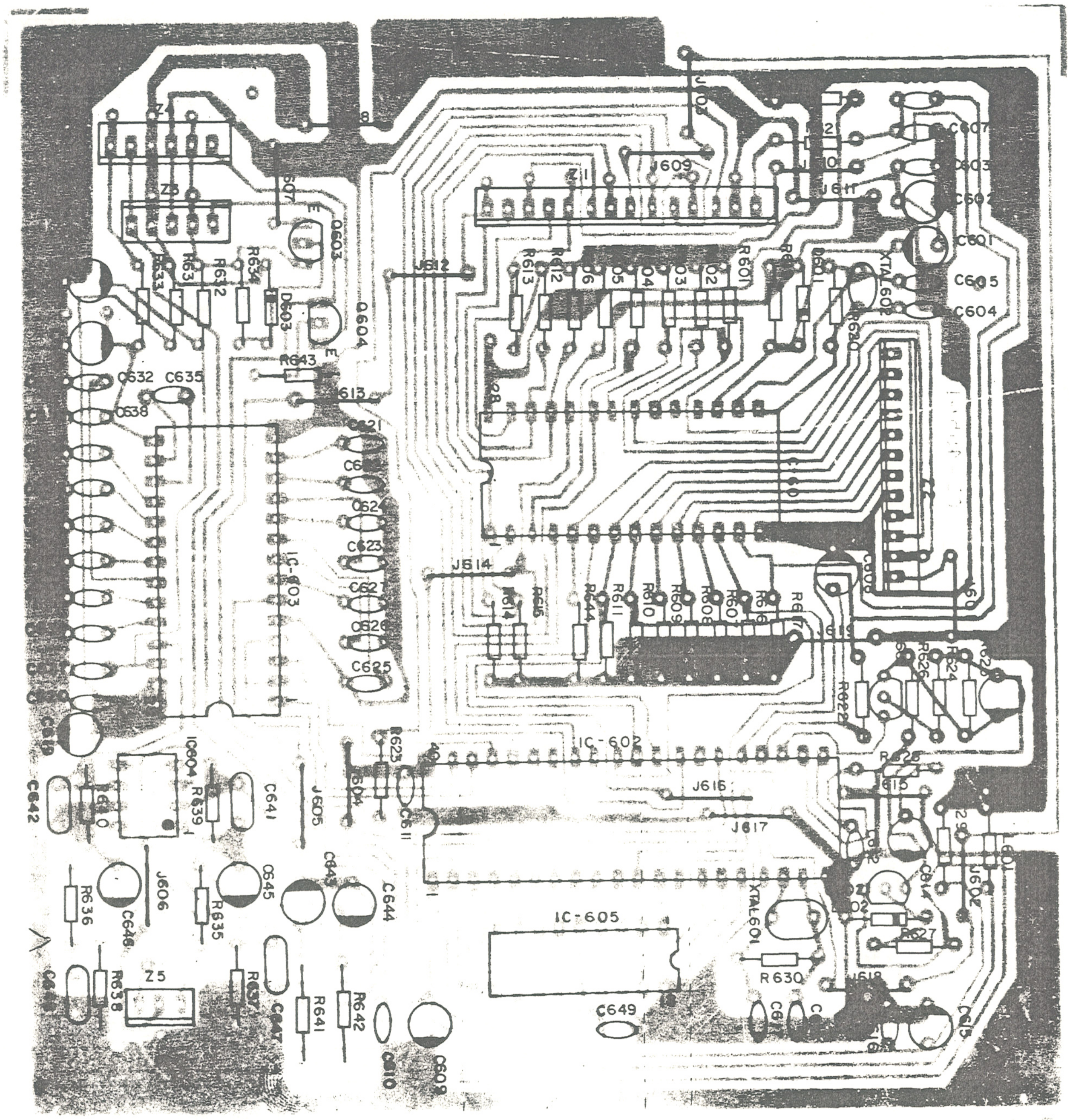
CAUTION HAZARDOUS LASER RADIATION WHEN OPEN AND INTERLOCK DEFEATED

ATTENTION RAYONNEMENT LASER DANGEREUX SI OUVERT AVEC L'ENCLENCHEMENT DE SECURITE ANNULE

CD CABINET PARTS LIST

Ref.	Description	Part No.
1	Clamper Button BLK Acetal	201687
2	Spring-Clamper	201688
3	Clamper BLK ABS	201689
4	Button-Vert Loader Rubber BLK	201690
5	Vertical Loader BLK HIPS	201691
6	Spring-Loader BLK	201692
7	Push-On Retainer 02-Post	201693
8	Washer-Fixing	201694
9	Damping Pad-Frame	201695
10	Vertical Frame-CDM2	201696
11	Screw-CDM2	201697
12	Spring-Catch	201698
13	Catch Acetal BLK	201699
14	Rubber Plate-Catch 30-40	201700
15	Damping Pad-Spring	201701
16	Suspension Spring-Short	201702
17	Spring Anchor	201703
18	Suspension Spring-Long	201704
20	Laser Radiation	201705
21	Warning Label	201706

DECODER P.C. BOARD ASSEMBLY (Top View)


IC-602
IC-603
IC-604
IC-605
XTAL601
XTAL602
J609
J611
J612
J613
J614
J615
J616
J617
J619
J605
J606
Z1
Z3
Z5
Q603
D603
Q604
R601
R611
R612
R613
R614
R615
R620
R623
R624
R626
R627
R628
R630
R632
R633
R634
R635
R636
R637
R638
R639
R641
R642
R643
C601
C602
C603
C604
C605
C607
C611
C614
C621
C623
C624
C625
C626
C627
C632
C635
C638
C641
C642
C644
C645
C646
C647
C649

LASER SAFETY

This product employs a laser. Only qualified service personnel may remove the cover or attempt to service this product. Failure to observe this notice may result in possible eye injury.

CAUTION : USE OF CONTROLS OR ADJUSTMENTS TO PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

This product bears the following warning label on the rear panel.

CLASS 1
LASER PRODUCT

DANGER: INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK FAILED OR DEFEATED. AVOID DIRECT EXPOSURE TO BEAM.

CAUTION: HAZARDOUS LASER RADIATION WHEN OPEN AND INTERLOCK DEFEATED.

ATTENTION: RAYONNEMENT LASER DANGEREUX SI OUVERT AVEC L'ENCLENCHEMENT DE SECURITE ANNULE.

LASER SAFETY

This product employs a laser Only qualified service personnel may remove the cover or attempt to service this product Failure to observe this notice may result in possible eye injury

CAUTION · USE OF CONTROLS, OR ADJUSTMENTS TO PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE

This product bears the following warning label on the rear panel

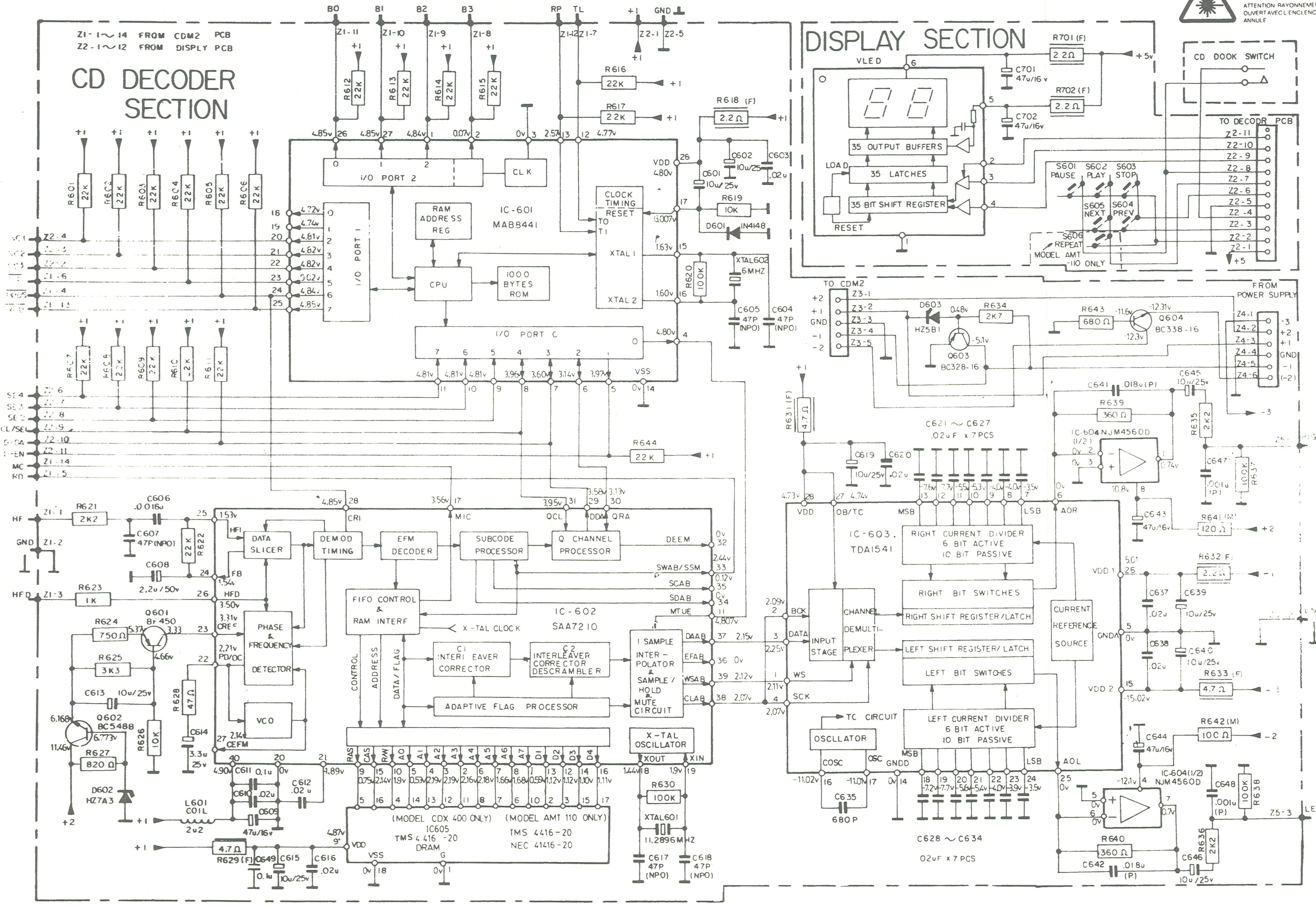
CLASS 1
LASER PRODUCT

DANGER INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK FAILED OR DEFEATED AVOID DIRECT EXPOSURE TO BEAM

CAUTION HAZARDOUS LASER RADIATION WHEN OPEN AND INTERLOCK DEFEATED

ATTENTION RAYONNEMENT LASER DANGEREUX SI OUVERT AVEC L ENCLENCHEMENT DE SECURITE ANNULE

SCHEMATIC DIAGRAM (CD DECODER/DISPLAY SECTION)

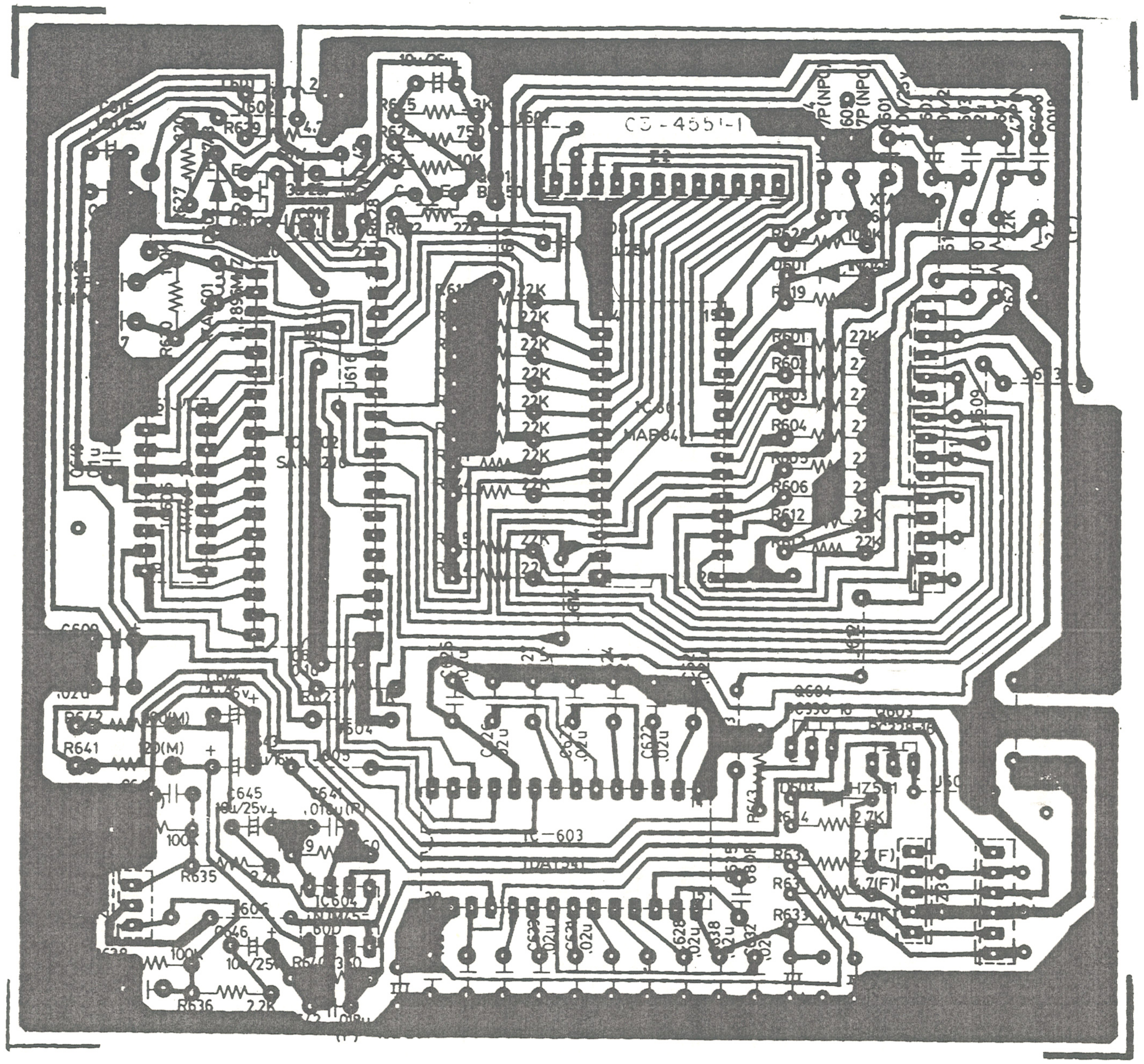

Z1-1 ~ 14 FROM CDM2 PCB
Z2-1 ~ 12 FROM DISPLY PCB
CD DECODER SECTION
DISPLAY SECTION
CD DOOK SWITCH
TO DECODR PCB
VLED
35 OUTPUT BUFFERS
35 LATCHES
35 BIT SHIFT REGISTER
LOAD
RESET
S601 PAUSE
S602 PLAY
S603 STOP
S605 NEXT
S604 PREV
S606 REPEAT
MODEL AMT -110 ONLY
R701 (F) 2.2Ω
R702 (F) 2.2Ω
C701 47u/16v
C702 47u/16v
+5v
IC-601 MAB8441
I/O PORT 2
I/O PORT 1
I/O PORT C
CLK
RAM ADDRESS REG
CPU
1000 BYTES ROM
CLOCK TIMING RESET
XTAL 1
XTAL 2
XTAL602 6MHZ
R612 22K
R613 22K
R614 22K
R615 22K
R616 22K
R617 22K
R618 (F) 2.2Ω
R619 10K
R620 100K
D601 IN4148
C601 10u/25v
C602 10u/25
C603 .02u
C605 47P (NPO)
C604 47P (NPO)
R601 22K
R602 22K
R603 22K
R604 22K
R605 22K
R606 22K
R607 22K
R608 22K
R609 22K
R610 22K
R611 22K
R644 22K
B0
B1
B2
B3
RP
TL
GND
SE 4
SE 3
SE 2
CL/SEL
D-DA
I-EN
MC
RD
HF
GND
HFD
R621 2K2
C606 .0018u
C607 47P(NPO)
R622 22K
C608 2.2u/50v
R623 1K
R624 750Ω
Q601 BF450
R625 3K3
C613 10u/25v
Q602 BC548B
R626 10K
R627 820Ω
D602 HZ7A3
R628 47Ω
C614 3.3u 25v
L601 COIL 2u2
C611 0.1u
C610 .02u
C612 .02u
C609 47u/16v
R629 (F) 4.7Ω
C649 0.1u
C615 10u/25v
C616 .02u
IC-602 SAA7210
DATA SLICER
DEMOD TIMING
EFM DECODER
SUBCODE PROCESSOR
Q CHANNEL PROCESSOR
PHASE & FREQUENCY DETECTOR
VCO
FIFO CONTROL & RAM INTERF
X-TAL CLOCK
C1 INTERLEAVER CORRECTOR
C2 INTERLEAVER CORRECTOR DESCRAMBLER
ADAPTIVE FLAG PROCESSOR
I SAMPLE INTER-POLATOR & SAMPLE / HOLD & MUTE CIRCUIT
X-TAL OSCILLATOR
CONTROL
ADDRESS
DATA / FLAG
DEEM
SWAB/SSM
SCAB
SDAB
MTUE
DAAB
EFAB
WSAB
CLAB
XOUT
XIN
IC605 TMS 4416-20 DRAM
(MODEL CDX 400 ONLY)
(MODEL AMT 110 ONLY) TMS 4416-20 NEC 41416-20
RAS CAS RW A0 A1 A2 A3 A4 A5 A6 A7 D1 D2 D3 D4
VDD
VSS
XTAL601 11.2896MHZ
R630 100K
C617 47P (NPO)
C618 47P (NPO)
TO CDM2
D603 HZ5B1
Q603 BC328-16
R634 2K7
R643 680Ω
Q604 BC338-16
FROM POWER SUPPLY
R631 (F) 4.7Ω
C619 10u/25v
C620 .02u
C621 ~ C627 .02uF x 7PCS
IC-603 TDA1541
RIGHT CURRENT DIVIDER 6 BIT ACTIVE 10 BIT PASSIVE
RIGHT BIT SWITCHES
RIGHT SHIFT REGISTER/LATCH
INPUT STAGE
CHANNEL DEMULTIPLEXER
LEFT SHIFT REGISTER/LATCH
LEFT BIT SWITCHES
LEFT CURRENT DIVIDER 6 BIT ACTIVE 10 BIT PASSIVE
CURRENT REFERENCE SOURCE
OSCLLATOR
TC CIRCUIT
C635 680P
C628 ~ C634 02uF x 7PCS
IC-604 NJM4560D
R639 360Ω
C641 .018u (P)
C645 10u/25v
R635 2K2
R637 10K
C647 .001u (P)
C643 47u/16v
R641 (M) 120Ω
R632 (F) 2.2Ω
C637 .02u
C639 10u/25v
C638 .02u
C640 10u/25v
R633 (F) 4.7Ω
R642 (M) 10Ω
C644 47u/16v
C648 .001u (P)
R638 10K
R640 360Ω
C642 .018u (P)
R636 2K2
C646 10u/25v
RIGH
LEFT

ELECTRICAL PARTS LIST

Ref. No.	Description	Part No.
IC's		
IC101	IC BA4422	201601
IC102	IC BA4236	201602
IC103	IC BA1332	201603
IC202	IC LA3160	200405
IC201	IC LA3226T	201604
IC404	IC 79L15	201605
IC403	IC 7906	201606
IC402	IC 7805CT	201607
IC401	IC LA4446	201608
IC601	IC MAB8441/8442	200639
IC602	IC SAA7210	201609
IC605	IC TMS-4416-20/UPD4146C-20	201610
IC603	IC TDA1541	201611
IC604	IC NJM4560D	201612
Transistors		
Q203, 305	TR 2SC1317R	200076
Q201, 202	TR 2SC828R	201489
Q204, 301-304	TR 2SC2634S	200077
Q401	TR 2SD313D	50005
Q604	TR BC338-16	200640
Q602	TR BC548B	201615
Q601	TR BF450	201616
Q603	TR BC328-16	201617
Diodes		
D101, 202, 601	D. IN4148	190715
D201, 402, 404-415	D. IN4002	15008
D306	D. IN60	15001
D401	D. Zener Diode 10C	201618
D602	D. Zener Diode HZ7A3	201619
D603	D. Zener Diode HZ5B1	201620
D102, 301-305	D. LED Red LTL-3211A	201503
Coils		
L601	2.2uH	175024
L203	Tape Osc Coil CW-8066-1	201533
L201, 202	Tape Trap Coil CW-4052-2	201534
L101	FM RF Coil CW-8109	201621
L102	FM IF Coil CW-5078-1	200096
L103	FM Osc Coil CW-8110	201622
L104	AM IFT Coil CW-5086-1	200097
L105	FM DET Coil CW-5091-1	201623
L106	MW Osc Coil CW-8108-1	201624
L107	MW/LW Bar Ant Coil CW-2106	201625
L108	FM Trap Coil CW-4013	201626
Crystal		
XTAL601	Quartz Crystal 11.2896MHz	201627
Filters		
XTAL602	Ceramic Resonator 6MHz	173011
BF101	Band Pass Filter WB8L	201628
CF101	FM Ceramic Filter 10.7mA	993034
CF102	Ceramic Filter 465kHz	800114
Condenser		
VC101	Polystyrene Condenser	201629
TC105	Trimmer Condenser 30pF	201539
Variable Resistors		
SFR101	Semi Fix 5KB	201630
SFR201	Semi Fix 50KB	201631
VR301-303	Slide Volume 100KB x 2	201632
VR305	Slide Volume 100KW	201633
VR304	Slide Volume 100KA x 2	201634
Switches		
S101	Band Switch	201635
S201	Slide Switch	201636
S301	Function Switch	201637
S601-605	Tact Switch	201638
	Leaf Switch	201639
S401	Power Switch	⚠ 201640

Ref. No.	Description	Part No.
Jacks		
	Data In/Out Jack	201728
	Aux Jack	201729
HJ501	Headphone Jack	201641
MJ501, 502	Mic Jack	201642
Miscellaneous		
F401	Fuse 2A (T)	200537
F402, 403	Fuse 800mA (T)	201730
PT401	Power Transformer ⚠	*201643
	Display	201644
Resistors (All ¼W unless stated otherwise)		
3.3Ω	R233, 350	201548
4.7Ω	R403-406	201707
8.2Ω	R219	201549
33Ω	R122	10019
39Ω	R205, 206	201708
47Ω	R108, 628	10020
56Ω	R223, 224	10022
100Ω	R150, 201, 202, 642	10032
120Ω	R641	10034
150Ω	R217	10036
180Ω	R305, 308	10038
220Ω	R220, 237, 349, 505, 506	10040
330Ω	R104, 236	10044
360Ω	R639, 640	10045
390Ω	R106, 306	10046
560Ω	R121	10050
680Ω	R643	10052
750Ω	R624	10053
820Ω	R307, 627	10054
1kΩ	R110-114, 343, 344, 401, 402, 410, 503, 504, 509, 623	10061
1.5kΩ	R309	10065
2.2kΩ	R345, 346, 627, 635, 636	10069
2.7kΩ	R634	10071
3.3kΩ	R115, 116, 625	10073
3.9kΩ	R107	10075
4.7kΩ	R207, 208, 211, 212, 214, 215, 235, 339, 340, 347, 348	10077
5.6kΩ	R310	10079
6.8kΩ	R321, 322, 331, 332	10081
8.2kΩ	R231, 329, 330	10083
9.1kΩ	R109	201709
10kΩ	R102, 117, 118, 317-320, 325-328, 333-336, 619, 620	10085
12kΩ	R119, 120, 225, 226, 513, 514	10087
15kΩ	R407, 408	10089
18kΩ	R213	10091
22kΩ	R209, 210, 322, 324, 601-617, 622, 644	10093
33kΩ	R227, 228, 313, 314, 341, 342	10097
47kΩ	R218, 311, 312	10101
56kΩ	R229, 230, 301, 302, 507, 508	10103
68kΩ	R203, 204	10105
100kΩ	R216, 221, 222, 620, 630, 637, 638	10109
120kΩ	R511, 512	10111
220kΩ	R103, 105, 337, 338	10117
470kΩ	R303, 304	10125
1.5MΩ	R315, 316	210710
2.2MΩ	R232	201551
470Ω ½W	R501, 502	201711
Fuse Resistor ⚠		
1Ω ½W	R411	200438
2.2Ω ¼W	R618, 632, 701, 702	201712
3.3Ω ¼W	R234	200436
4.7Ω ¼W	R409, 629, 631, 633	210713

DECODER P.C. BOARD ASSEMBLY (Bottom View)



LASER SAFETY

This product employs a laser. Only qualified service personnel may remove the cover or attempt to service this product. Failure to observe this notice may result in possible eye injury.

CAUTION : USE OF CONTROLS OR ADJUSTMENTS TO PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

This product bears the following warning label on the rear panel.

CLASS 1
LASER PRODUCT

DANGER : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK FAILED OR DEFEATED. AVOID DIRECT EXPOSURE TO BEAM.

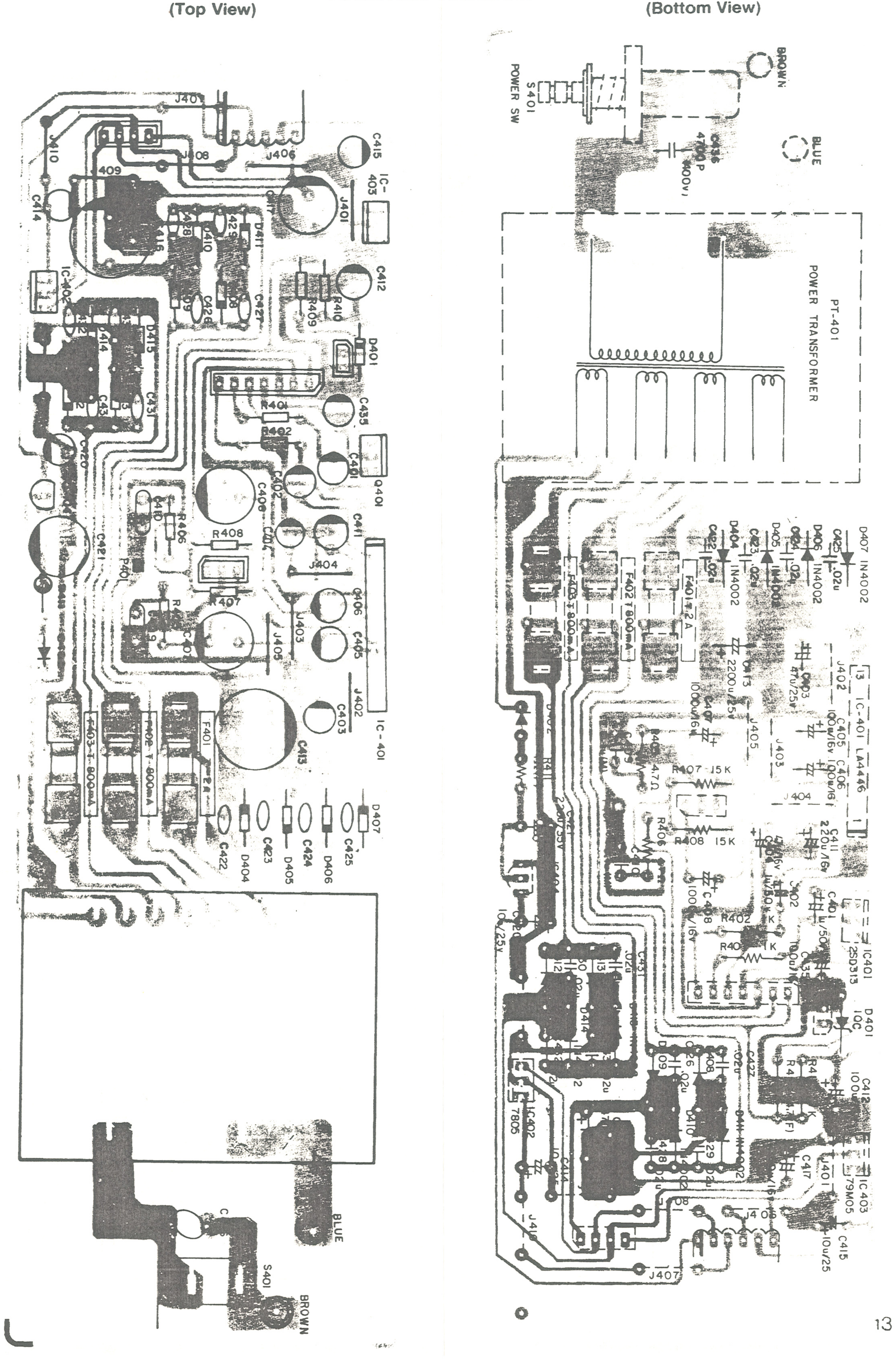
CAUTION : HAZARDOUS LASER RADIATION WHEN OPEN AND INTERLOCK DEFEATED.

ATTENTION : RAYONNEMENT LASER DANGEREUX SI OUVERT AVEC L'ENCLENCHEMENT DE SECURITE ANNULE.

ELECTRICAL PARTS LIST

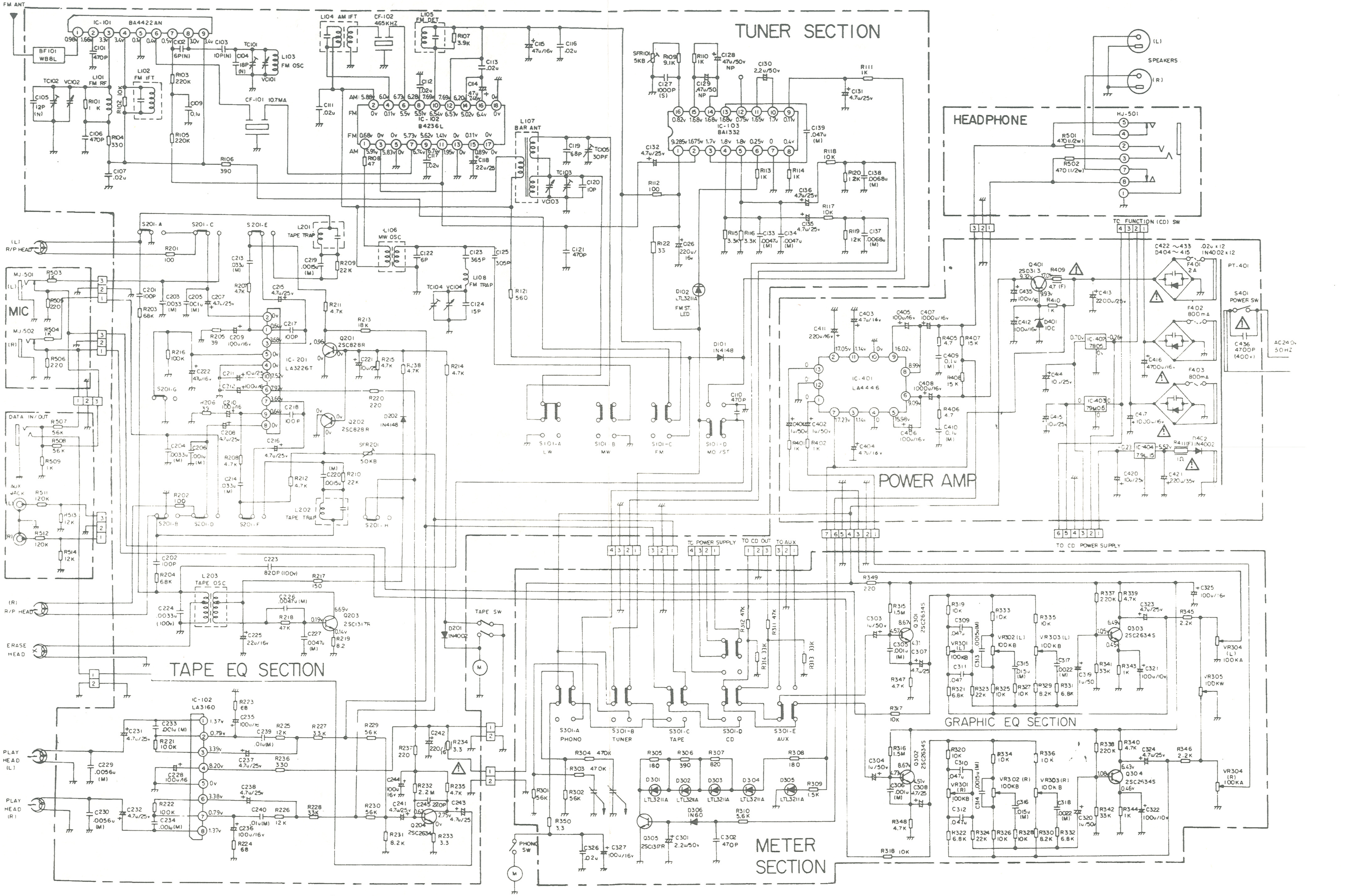
Description	Circuit Ref.	Part No.
Ceramic Capacitors		
6pF	C102	201714
6pF	C122	201715
10pF	C120	200509
10pF	C103	200509
12pF	C105	200511
15pF	C124	201716
47pF	C604, 605, 607, 617, 618	150515
68pF	C119	150516
100pF	C201, 202, 217, 218, 245	24016
470pF	C101, 106, 110, 121, 302	200521
680pF	C635	200522
1800pF	C606	201717
4700pF/400V	C436	201718
0.0047μF	C246	201719
0.02μF	C107, 111-113, 116, 117	200524
0.022μF	C326, 423-433, 603, 610, 612, 616, 620-634, 637, 638	201557
0.1μF	C109, 611, 649	24020
Electrolytic Capacitors		
0.47μF 50V NPO	C128, 129	200527
0.47μF 50V	C114	150909
1μF 50V	C303, 304, 319, 320, 401, 402	20062
2.2μF 50V	C130, 301, 608	201720
3.3μF 25V	C614	201721
4.7μF 25V	C131, 132, 135, 136, 207, 208, 215, 216, 231, 237, 238, 241, 243, 307, 308, 323, 324	202563
10μF 25V	C211, 221, 315, 414, 415, 420, 601, 602, 613, 619, 639, 640, 645, 646	200528
22μF 16V	C225	200530
22μF 25V	C118	201565
47μF 16V	C115, 222, 609, 643, 644, 701, 702	20027
100μF 10V/16V	C321, 322	20028
100μF 16V	C209, 210, 212, 228, 235, 236, 244, 325, 327, 405, 406, 412, 435	20028
220μF 16V	C242, 411	20029
220μF 35V	C421	201722
1000μF 16V	C407, 408, 417	1400345
2200μF 25V	C413	20119
4700μF 16V	C416	170613
Mylar Capacitors		
0.001μF	C305, 306	21020
0.0015μF	C219, 220, 313, 314	809231
0.0022μF	C317, 318	21002
0.0047μF	C133, 134	21004
0.0056μF	C229, 230	201723
0.0068μF	C137, 138	201559
0.01μF	C205, 206, 233, 234, 239, 240	21006
0.015μF	C315, 316	800481
0.033μF	C203, 204, 213, 214	21012
0.047μF	C139, 226, 227	21008
0.1μF	C409, 410	21019
Polystyrene Capacitors		
305pF	C125	201724
365pF	C123	201725
820pF	C223	130106
1000pF	C127	130132
0.001μF	C647, 648	171093
0.0033μF	C224	201569
0.018μF	C641, 642	201726
Barrier Layer		
0.047μF	C309-312	201727

POWER AMP P.C.BOARD

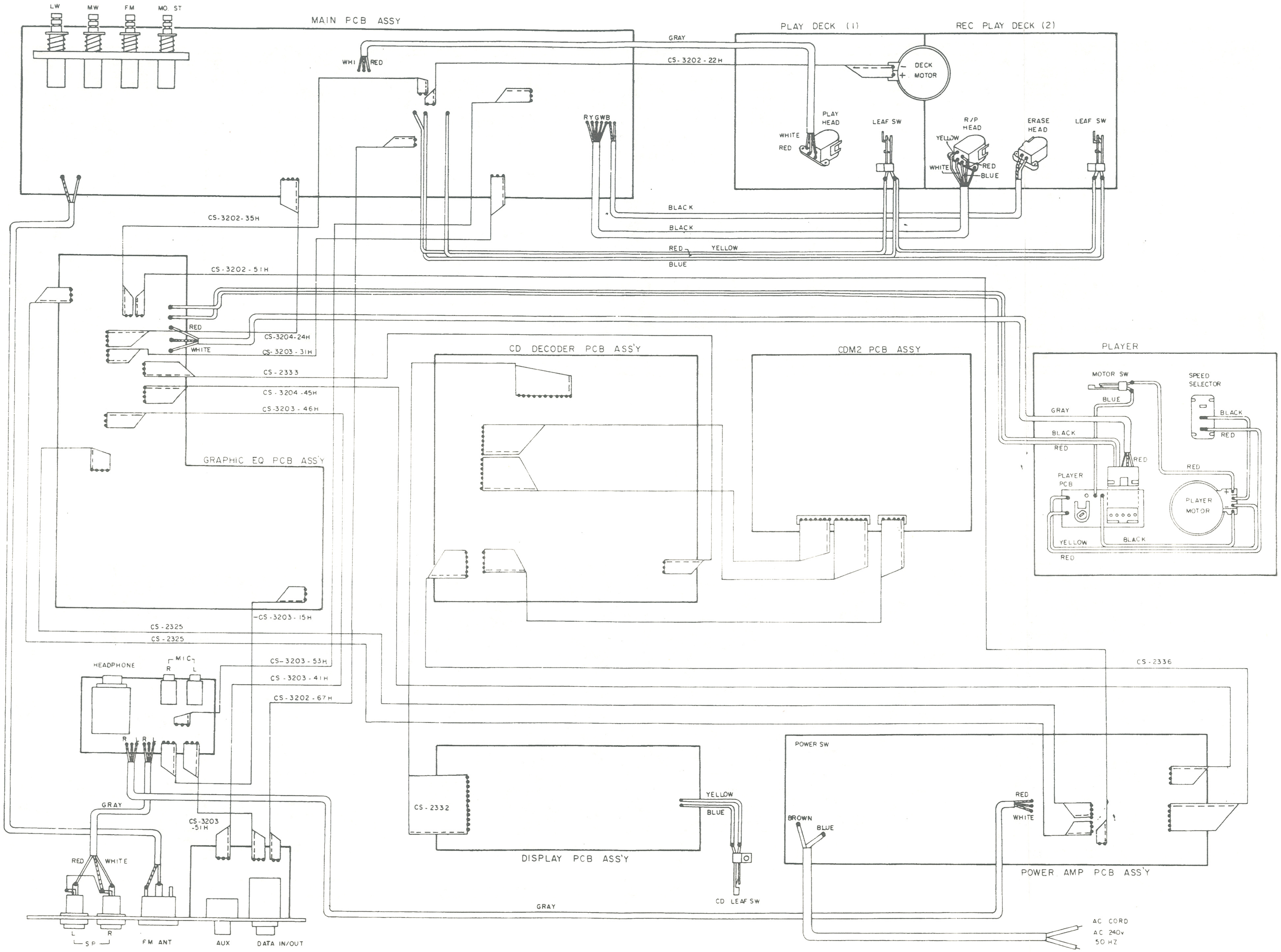

(Top View)

(Bottom View)
J401
J410
J408
J406
C415
IC-403
C414
C412
IC-402
R409
R410
D401
C435
R401
R402
C401
Q401
C411
R408
R406
J404
R407
C406
C405
J403
J405
J402
C403
IC-401
F403 T 800mA
F402 T 800mA
F401
C413
D407
C422
D404
C423
D405
C424
D406
C425
BLUE
S401
BROWN
S401
POWER SW
C436
4700P
400V
BLUE
PT-401
POWER TRANSFORMER
D407 IN4002
D406 IN4002
D405
D404
F401 T 2A
F402 T 800mA
F403 T 800mA
C413 2200u/25V
C403 47u/25V
C407 1000u/16V
IC-401 LA4446
C405 100u/16V
C406 100u/16V
R407 15K
R408 15K
R406 4.7Ω
C411 220u/16V
C408 1000u/16V
R402
IC401 2SD313
D401
C412
IC402 7805
IC403 79M05
C415 10u/25
C417
C414
J407

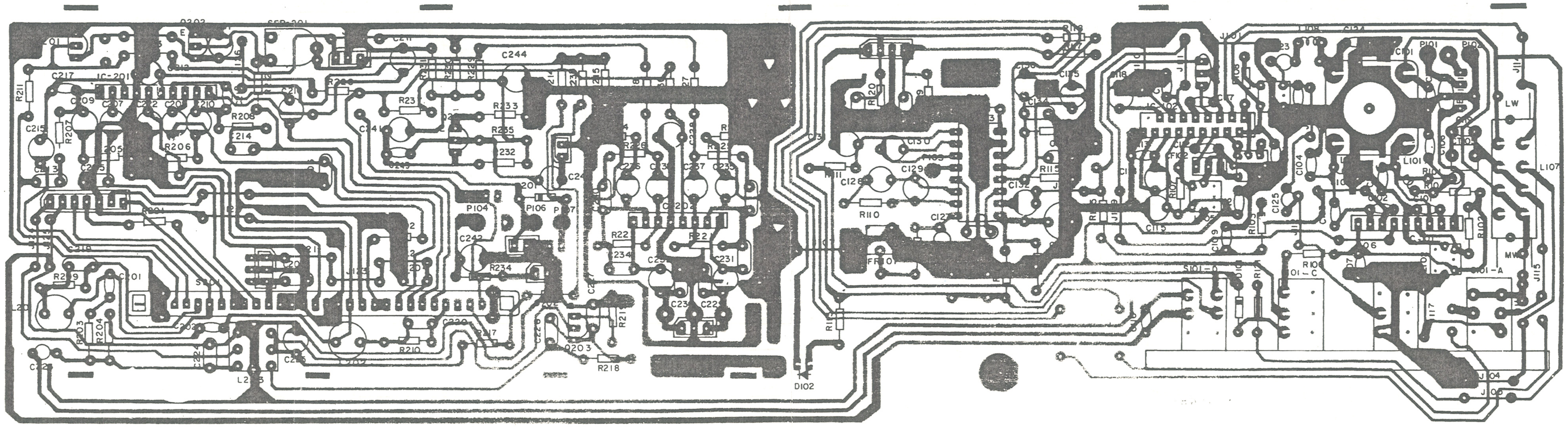
SCHEMATIC DIAGRAM (TUNER/TAPE EQ/GRAPHIC EQ/POWER AMP SECTION)


FM ANT
TUNER SECTION
IC-101 BA4422AN
IC-102 BA4236L
IC-103 BA1332
L104 AM IFT
CF-102 465KHZ
L105 FM DET
L107 BAR ANT
L106 MW OSC
L108 FM TRAP
FM ST. LED
HEADPHONE
HJ-501
SPEAKERS
(L)
(R)
MIC
MJ-501
MJ-502
DATA IN/OUT
AUX JACK
(L) R/P HEAD
(R) R/P HEAD
ERASE HEAD
PLAY HEAD (L)
PLAY HEAD (R)
L201 TAPE TRAP
L202 TAPE TRAP
L203 TAPE OSC
IC-201 LA3226T
IC-102 LA3160
TAPE EQ SECTION
TAPE SW
PHONO SW
S101-A LW
S101-B MW
S101-C FM
S101-D MO/ST
IC-401 LA4446
POWER AMP
TC FUNCTION (CD) SW
PT-401
S401 POWER SW
AC 240V 50HZ
TO CD POWER SUPPLY
TC POWER SUPPLY
TO CD OUT
TO AUX
S301-A PHONO
S301-B TUNER
S301-C TAPE
S301-D CD
S301-E AUX
GRAPHIC EQ SECTION
METER SECTION

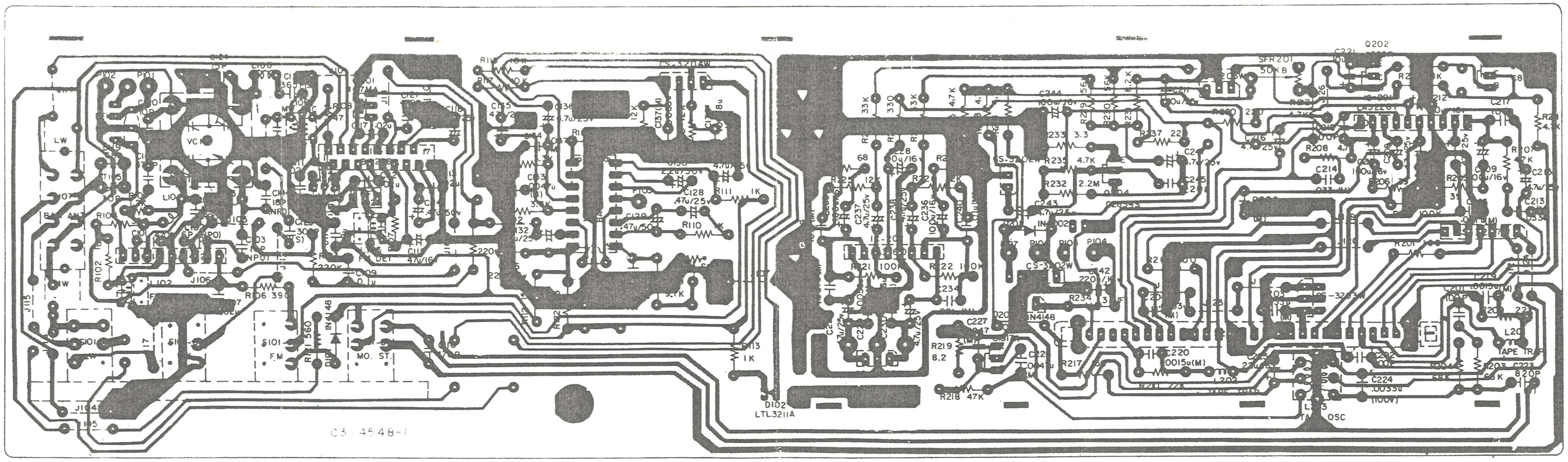
WIRING DIAGRAM


LW
MW
FM
MO. ST
MAIN PCB ASSY
WHI
RED
GRAY
CS-3202-22H
PLAY DECK (1)
REC PLAY DECK (2)
DECK MOTOR
PLAY HEAD
WHITE
RED
LEAF SW
R/P HEAD
YELLOW
WHITE
RED
BLUE
ERASE HEAD
LEAF SW
R Y G W B
BLACK
BLACK
RED
YELLOW
BLUE
CS-3202-35H
CS-3202-51H
RED
WHITE
CS-3204-24H
CS-3203-31H
CS-2333
CS-3204-45H
CS-3203-46H
GRAPHIC EQ PCB ASS'Y
CD DECODER PCB ASS'Y
CDM2 PCB ASSY
PLAYER
MOTOR SW
SPEED SELECTOR
BLUE
GRAY
BLACK
RED
BLACK
RED
RED
RED
PLAYER PCB
PLAYER MOTOR
YELLOW
RED
BLACK
CS-3203-15H
CS-2325
CS-2325
CS-2336
HEADPHONE
MIC
R
L
CS-3203-53H
CS-3203-41H
CS-3202-67H
R
L
R
L
GRAY
CS-3203 -51H
RED
WHITE
L
R
SP
FM ANT
AUX
DATA IN/OUT
CS-2332
DISPLAY PCB ASS'Y
YELLOW
BLUE
CD LEAF SW
GRAY
POWER SW
BROWN
BLUE
RED
WHITE
POWER AMP PCB ASS'Y
AC CORD
AC 240v
50 HZ

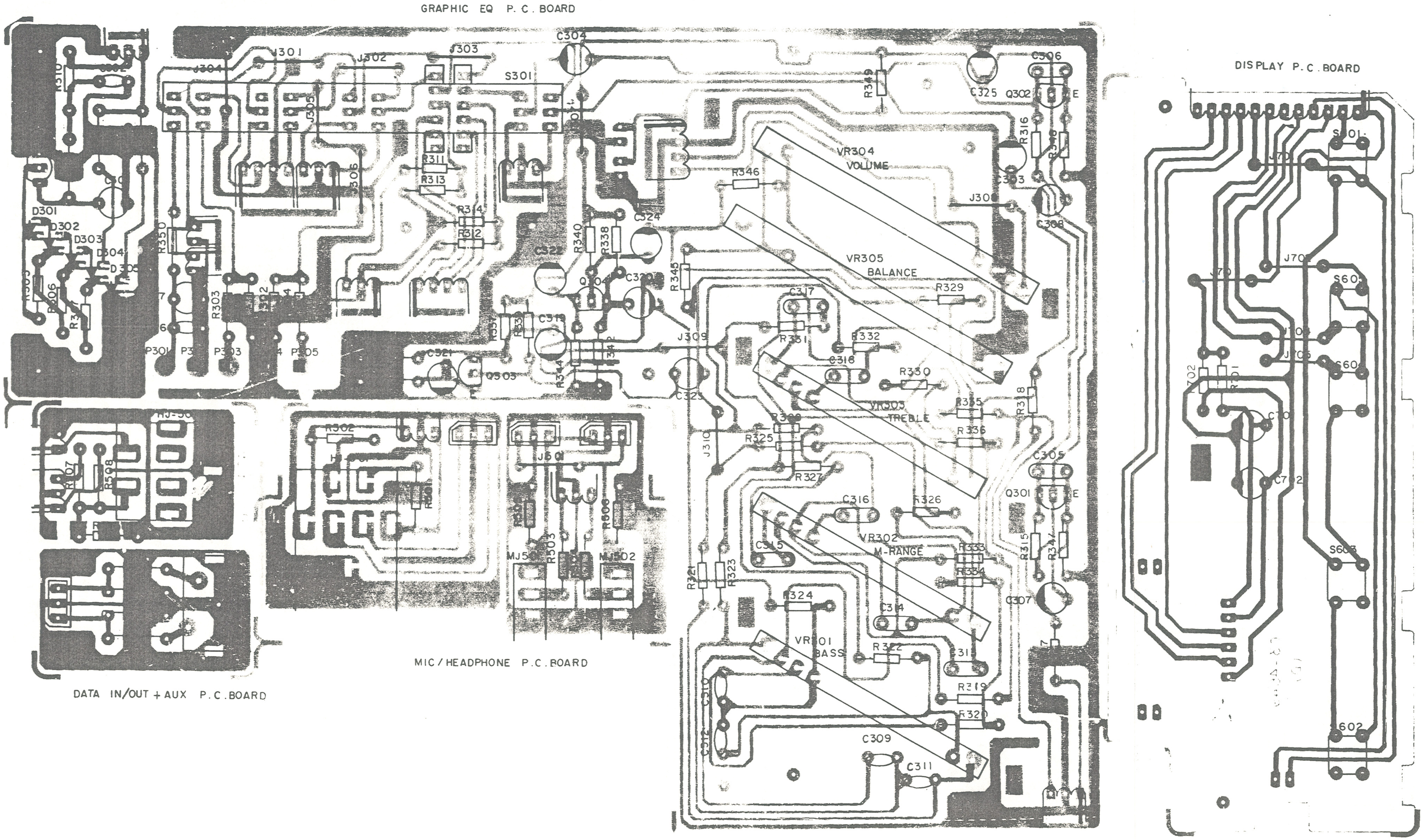
MAIN PCB (Top View)


IC-201
IC-102
SFR-201
Q202
Q203
C244
P104
P106
J123
D102
L205
LW
MW
J104
J105
S101-A
S101-C
FR101

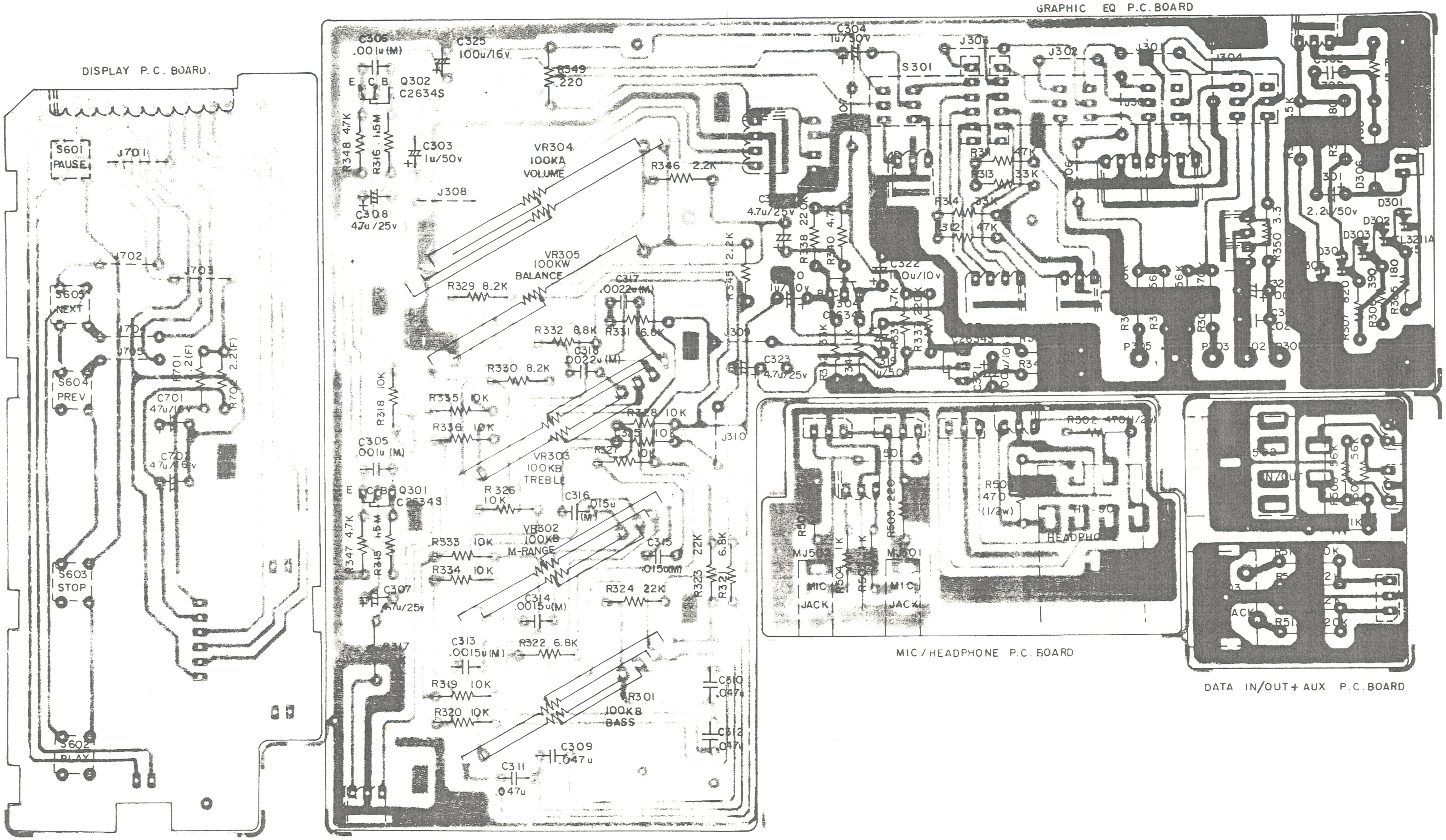
MAIN PCB (Bottom View)


SFR201
50KB
Q202
LA3220T
VC1
BAL ANT
D102
LTL3211A
TAPE OSC
TAPE TRAP
F.M
MO. ST.
1N4148
C3-4548-1

GRAPHIC EQUALISER & DISPLAY & HEADPHONE/MIC & DATA IN/OUT+AUX P.C. BOARD ASSEMBLY
TOP VIEW


GRAPHIC EQ P.C. BOARD
DISPLAY P.C. BOARD
MIC/HEADPHONE P.C. BOARD
DATA IN/OUT + AUX P.C. BOARD
C304
J301
J302
J303
J304
S301
R310
D301
D302
D303
D304
D305
R350
R303
R306
R311
R313
R314
R312
R340
R338
C324
R345
C322
Q304
C319
C321
Q303
R344
J309
C323
J310
P301
P303
P305
R349
C325
Q302
C306
R316
VR304
VOLUME
R346
J308
C303
C308
VR305
BALANCE
R329
C317
R331
R332
C318
R330
VR303
TREBLE
R335
R336
R318
R325
R327
C305
Q301
C316
R326
VR302
M-RANGE
C315
R333
R334
R315
R321
R323
R324
C314
C307
VR301
BASS
R322
C313
R319
R320
C310
C312
C309
C311
HJ-501
R302
J501
MJ501
MJ502
R107
R598
S601
J701
J702
J703
J704
J705
S604
S602
S603
C701
C702
R701
R702

GRAPHIC EQUALISER & DISPLAY & HEADPHONE/MIC & DATA IN/OUT+AUX P.C. BOARD ASSEMBLY
BOTTOM VIEW

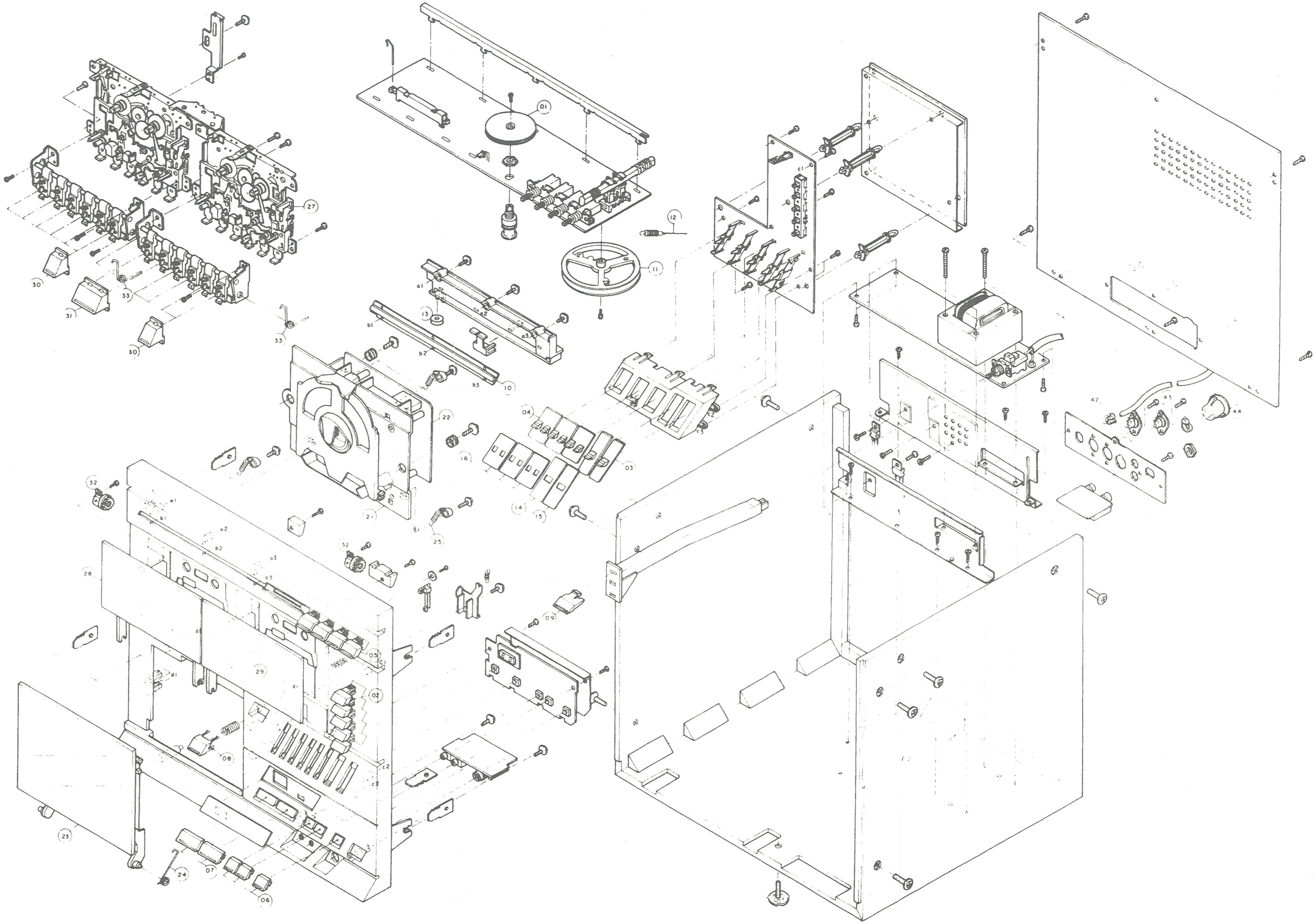

DISPLAY P.C. BOARD
GRAPHIC EQ P.C. BOARD
MIC / HEADPHONE P.C. BOARD
DATA IN/OUT + AUX P.C. BOARD
S601 PAUSE
J701
J702
J703
S605 NEXT
J704
J705
S604 PREV
R701 2.2(F)
R702 2.2(F)
C701 47u/16v
C702 47u/16v
S603 STOP
S602 PLAY
C306 .001u(M)
E C B
Q302 C2634S
C325 100u/16v
R349 .220
R348 4.7K
R316 1.5M
C303 1u/50v
C308 47u/25v
J308
VR304 100KA VOLUME
R346 2.2K
VR305 100KW BALANCE
R329 8.2K
C317 .0022u(M)
R332 6.8K
R331 6.8K
C318 .0022u(M)
R330 8.2K
R318 10K
R335 10K
R336 10K
R328 10K
R327 10K
VR303 100KB TREBLE
C305 .001u(M)
Q301 C2634S
R326 10K
C316 .015u(M)
R347 4.7K
R315 1.5M
R333 10K
VR302 100KB M-RANGE
C315 .015u(M)
R334 10K
C307 47u/25v
C314 .0015u(M)
R324 22K
R323 22K
R321 6.8K
R317
C313 .0015u(M)
R322 6.8K
R319 10K
VR301 100KB BASS
R320 10K
C310 .047u
C312 .047u
C309 .047u
C311 .047u
C304 1u/50v
J303
J302
J301
J304
S301
R311 47K
R313 33K
R314 33K
R312 47K
C322 100u/10v
C323 4.7u/25v
J309
J310
R338 22K
R345 2.2K
R350 3.3
C302
D306
D301
D302
D303
2.2u/50v
R302 470(1/2w)
R501 470 (1/2w)
HEADPHO
MJ501
MIC JACK
R503 220
R504 1K
IN/OUT
R510 2K
56K
1K

CABINET DRAWING & PARTS LIST

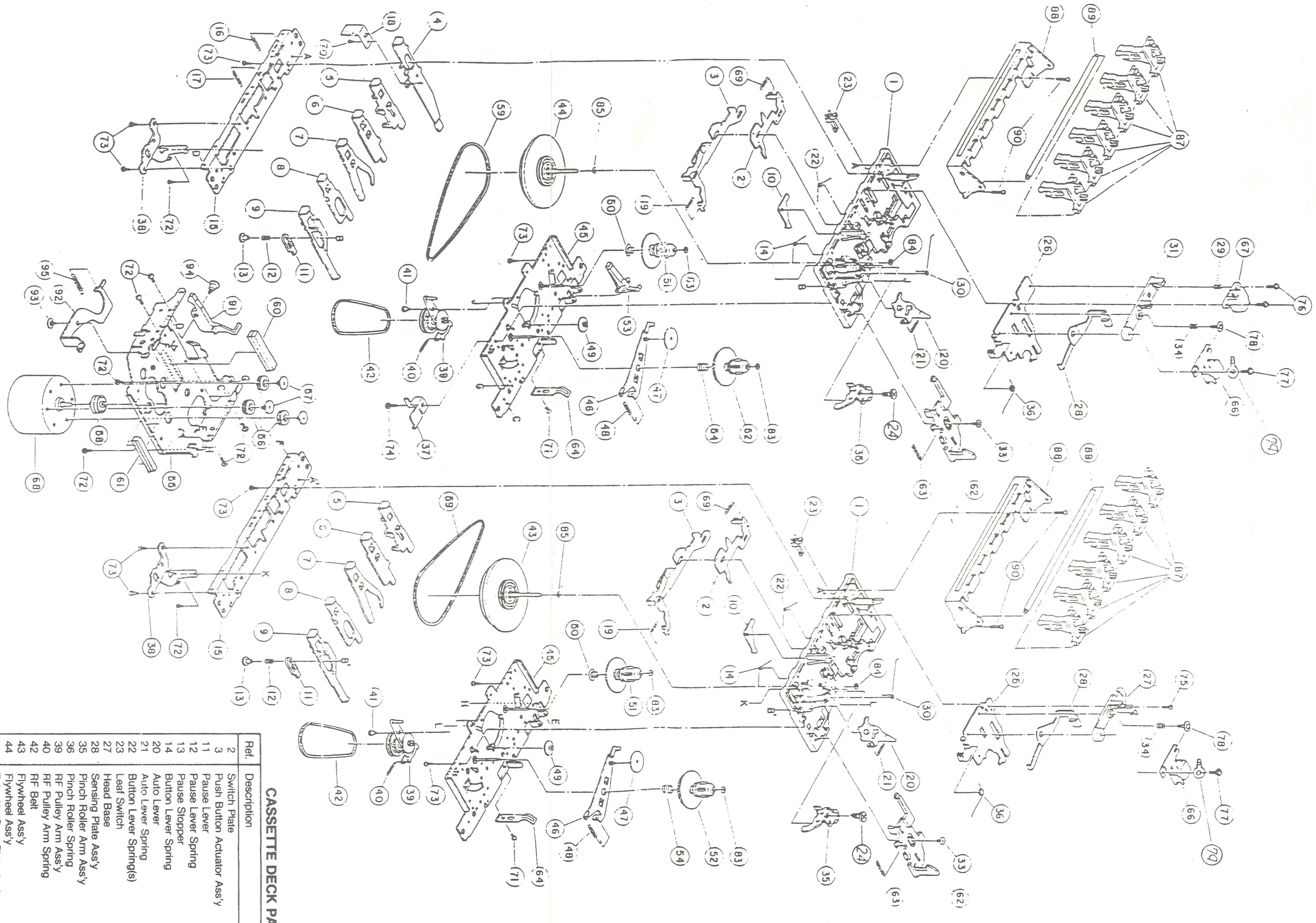
MECHANICAL PARTS LIST

1	Tuning Knob	201645
2	Function Knob	201646
3	Slide Knob	201647
4	Slide Knob (Eq)	201648
5	Push Knob (Radio)	201649
6	Knob A (CD)	201650
7	Knob B (CD)	201651
8	CD Eject Knob	201652
9	Knob (Power)	201653
10	Dial Window	201654
11	Dial Drum	201655
12	Dial Spring	201656
13	Pulley	201657
14	Skirt (Balance)	201658
15	Skirt (Volume)	201659
16	Skirt II	201660
17	Player Ass'y	*201731
18	Dust Cover Midi	201661
19	Hinge Midi	201662
21	CD Ass'y VCD-1	*201663
22	CDM-2	201664
23	C Door	201665
24	Eject Spring (CD Door)	201666
25	Suspension Spring	201667
26	Spring Anchor	201668
27	Cassette Deck Ass'y	*201669
28	Cassette Door A	201670
29	Cassette Door B	201671
30	Cassette Key A	201672
31	Cassette Key B	201673
32	Gear Damper Ass'y	201674
33	Eject Spring	201675
34	Vertical Frame-CDM2	201676
35	Vertical Loader	201677
36	Button-Vert Loader	201678
37	Clamper	201679
38	Clamper Button	201680
39	Spring-Clamper	201681
40	Spring-Catch	201682
41	Transit Clip	201683
42	Grip Strain	201684
43	Speaker Jack	201685
44	FM Antenna Socket	201686
	Speakers (M)	LS400

*Chargeable item subject to availability.



CASSETTE MECHANISM & PARTS LIST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CASSETTE DECK PARTS LIST

Ref.	Description	Part No.
2	Switch Plate	201732
3	Push Button Actuator Ass'y	201733
11	Pause Lever	201734
12	Pause Lever Spring	201735
13	Pause Stopper	201736
14	Button Lever Spring	201737
20	Auto Lever	201738
21	Auto Lever Spring	201739
22	Button Lever Spring(s)	201740
23	Leaf Switch	201741
27	Head Base	201742
28	Sensing Plate Ass'y	201743
35	Pinch Roller Arm Ass'y	201744
36	Pinch Roller Spring	201745
39	RF Pulley Arm Ass'y	201746
40	RF Pulley Arm Spring	201747
42	RF Belt	201748
43	Flywheel Ass'y	201749
44	Flywheel Ass'y	201750
46	Take Up Gear Plate Ass'y	201751
47	Take Up Roller Gear	201752
49	FF Gear	201753
51	Supply Reel Ass'y	201754
52	Take Up Reel Ass'y	201755
53	Record Safety Lever	201756
58	Motor Pulley	201757
59	Main Belt	201758
62	Eject Slide Lever	201759
63	Eject Slide Lever Spring	201760
65	Play Head	201761
66	Record Play Head	201762
67	Erase Head	201763
68	Motor	201764
87	Operation Lever	201765
89	Button Lever Shaft	201766